ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

MEMORANDUM

to: R.U.

RECEIVED
Field Operations Section
JUN 18 1984
Environmental Protection Agency
State of Illinois

DATE: May 3, 1984

TO: DWPC/FOS & RU

FROM: Steve Baldwin, DWPC/FOS, Region 4 SB

SUBJECT: VERMILION COUNTY - D. M. Fertilizers, Inc.

BACKGROUND INFORMATION

In June, 1983, a fish kill occurred in the North Fork of the Vermilion River. Agency investigation disclosed that kill was attributable to discharge from subject fertilizer facility. Agency fish kill letter was sent to facility on 3-2-84. Letter also pointed out need to obtain Agency permit to operate the facility wastewater lagoon and need to provide diking around chemical storage tanks. As of 5-1-84, the facility had not responded to the fish kill letter.

This writer and Ag. Specialist Eric Ackerman conducted a visit to the facility on the subject date. The visit was unannounced. [redacted] was contacted. The weather was overcast with temperature in the 50's. Our observations, etc. are reported as follows:

10:45 A.M. - Arrived at facility. Observations indicated facility runoff was entering IDOT stormwater inlet structure on the north side of Route 9 north of facility.

10:50 A.M. - Collected a sample of the water flowing underneath Route 9. Sample was collected as the water exited from the concrete box culvert on the north side of the highway. The flow rate was estimated at 1-2 gpm. The water was fairly clear and had no particular odor. Field test with Nesslers Reagent indicated an NH_3 content of greater than 2.5 mg/l. Photographs were taken. We were then joined by IDOT employee John Nixon. He said that he had heard that the person who farms the ground north of Route 9 (possibly [redacted]) had filed a lawsuit against IDOT. Allegedly, IDOT undertook some drainage modifications east of the site and the suit contends that the influx of the additional water is causing runoff across the plaintiff's field. We asked if the suit named D.M. Fertilizer as a party for damages attributable to Ag. Chemical runoff. Nixon indicated that he didn't know about that, but that IDOT Lead Worker Royce Adamson out of Danville (442-3246) would have additional information regarding the lawsuit.

Ackerman and I then made some general observations of the roadside ditches along the north and the west sides of the fertilizer facility.

We then went to the facility and contacted [redacted exemption 6]. We indicated our desire to collect a sample of the contents of the pesticide lagoon. We also indicated that observations disclosed that liquid runoff containing ammonia was presently leaving the facility site and was entering the inlet structure on the north side of Route 9.

We indicated to [redacted exemption 6] that we would also like to tour the facility; however, we knew that he was very busy. He gave us permission to take an unguided tour.

A brief description of significant features of the facility follows:

Dry Fertilizer Storage - Material is stored in an enclosed building. No particular problem was attributed to the handling/storage of this material.

Liquid Fertilizer Storage - Liquid Starter and 28% Fertilizers are stored in upright storage tanks. Tanks are clustered in one location. They are not presently diked. Observations indicate there is not room to allow construction of earthen dikes around the tanks. They would probably have to be moved to a different area. Pre-cast concrete panels may fit at the present tank location.

Load out facilities for the liquid fertilizer are shown on the facility sketch. It was noted that the load out facilities have no provisions for collection and/or containment of minor leakage, drippage or spillage. Obviously, a major discharge to the ground surface would result in uncontrollable runoff into adjacent roadside ditches.

Facility Drainage - Virtually the entire facility is gravelled. The railroad tracks along the east side of the facility represents the high side of the site. That being the case, surface runoff would flow either west and/or north to roadside ditches adjacent to the facility. The roadside ditches drain to the inlet structure located on the north side of Route 9. The apparent surface runoff pattern is indicated on the attached facility sketch.

Vehicle Wash/Flush Area - Wash/flush activities are reportedly done in an area located adjacent to the southwest corner of the evaporation lagoon. The area is gravel. Observations by Ackerman and I and comments made by [redacted exemption] indicate that vehicle wash/flush waste is suppose to flow by gravity to the evaporation lagoon via a ribbed plastic pipe which is buried in the wash/flush area. This plastic pipe rises to an elevation of approximately 2" - 3" above the gravel in the wash/flush area. Standing water, the elevation of which would apparently be the same as the surface elevation of the liquid in the evaporation lagoon, was observed to be within approximately 6" of the top of this plastic pipe. In other

words, if an additional 6" of liquid depth was placed into the lagoon, the liquid contents of the lagoon would drain onto the ground surface via the plastic pipe in the vehicle wash/flush area. [redacted] made the comment that recent precipitation caused the liquid levels in the lagoon to rise, resulting in a discharge via the plastic pipe.

[redacted] indicated that the applicator vehicles are washed and flushed out every night to prevent crystallization and nozzle plugging.

Pesticide Waste Evaporation Lagoon - According to [redacted], the lagoon was constructed by excavating to an original depth of approximately 8' - 10'; however, he doesn't think it's quite that deep now. Ackerman and I estimated the lagoon to be 80' x 80'. We also estimated that approximately 2' of freeboard existed at the lowest point (near southwest corner). The lagoon dikes, which were reportedly constructed out of the excavated material, appeared to be predominately clay; however, some gravel was evident.

Observations indicated that some surface water runoff during a rain would flow into the lagoon near the southeast corner.

In response to our questions, [redacted] acknowledged receipt of the Agency's fish kill letter; however, he indicated that he has been very busy with business matters and although he has given some thought to the ways of diking his fertilizer tanks, etc., he has had very little time to devote to the matter. Eric and I encouraged [redacted] to keep the lines of communication between himself and the Agency open and suggested that he communicate with Bruce Carlson as soon as possible. We also indicated the possibility that the Agency may wish to set down with [redacted] at a meeting to discuss our concerns. [redacted] indicated that such a meeting might be more beneficial if it was held at the facility site.

Although [redacted] was busy on the date of this visit, he struck me as being willing to work with the Agency in an effort to resolve the facility problems.

We departed the facility site at 12:45 P.M. We then observed the receiving stream at a point downstream of where facility runoff would have entered via the field tile. No unusual stream conditions were observed and no samples were collected.

A summary of the lab results for samples collected during this 5-3-84 visit follows. All samples were collected by this writer. The sampling point locations are depicted on the attached sketch. All results reported in mg/l unless noted otherwise.

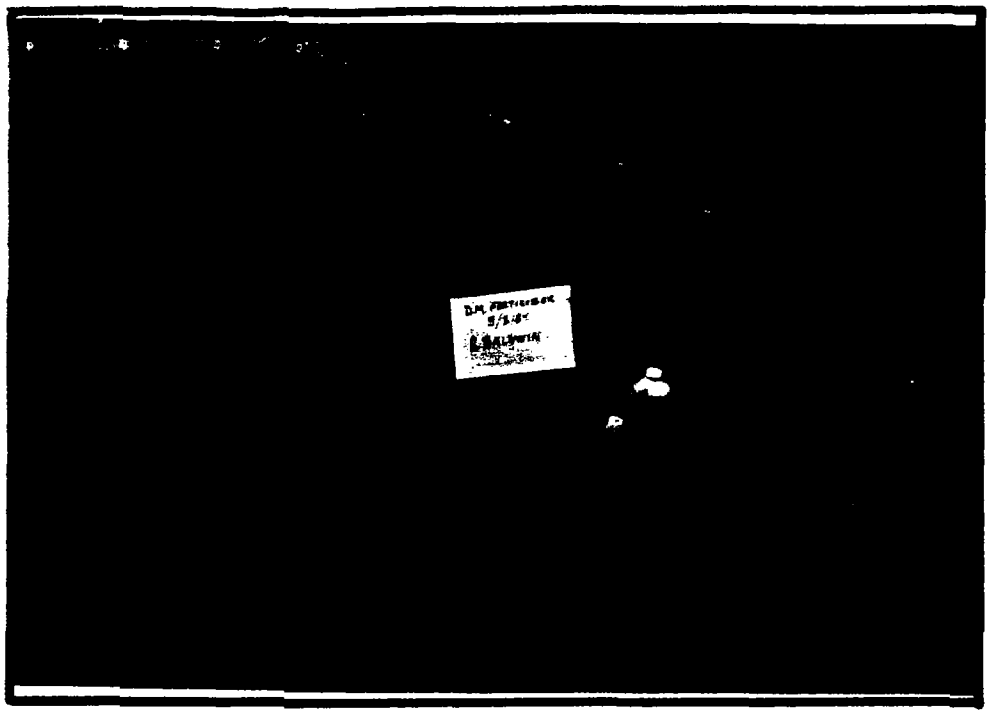
	Sampling Pt. A	Sampling Pt. B	Sampling Pt. C	Sampling Pt. D
Lab. No.	B041581	B041582	B041583	B041584
BOD	4	-	-	-
COD	12	-	-	-
TS/EC	1190	-	-	-
pH (units)	7.7	-	-	-
Ammonia (N)	77.0	3020.0	865.0	865.0
Phosphorus (P)	39.0	1600.0	2500.0	240.0

Two additional samples of the lagoon contents were collected and forwarded to John Hurley in the Springfield Lab for herbicide analysis. The results of those tests have not been received yet.

I took 4 photographs during this facility visit. The original color prints and the negative strip will be maintained in Region 4 files.

SB:bh

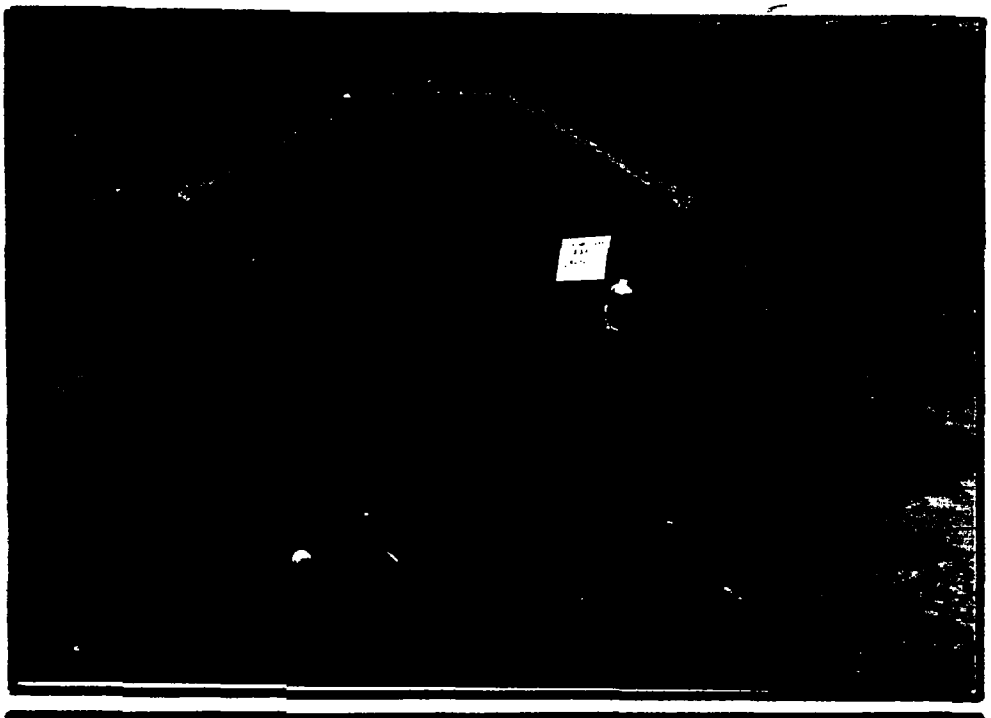
cc: - A.G. Taylor, Environmental Programs
- Bruce Carlson, DWPC/Enforcement
- Eric Ackerman
- Region 4 Files



① VERM. CO. (Near Hoopeston)
Subject: D.M. FERTILIZERS, INC.
Photo Date: 5/3/84
Photo By: S. BALDWIN
Comments:

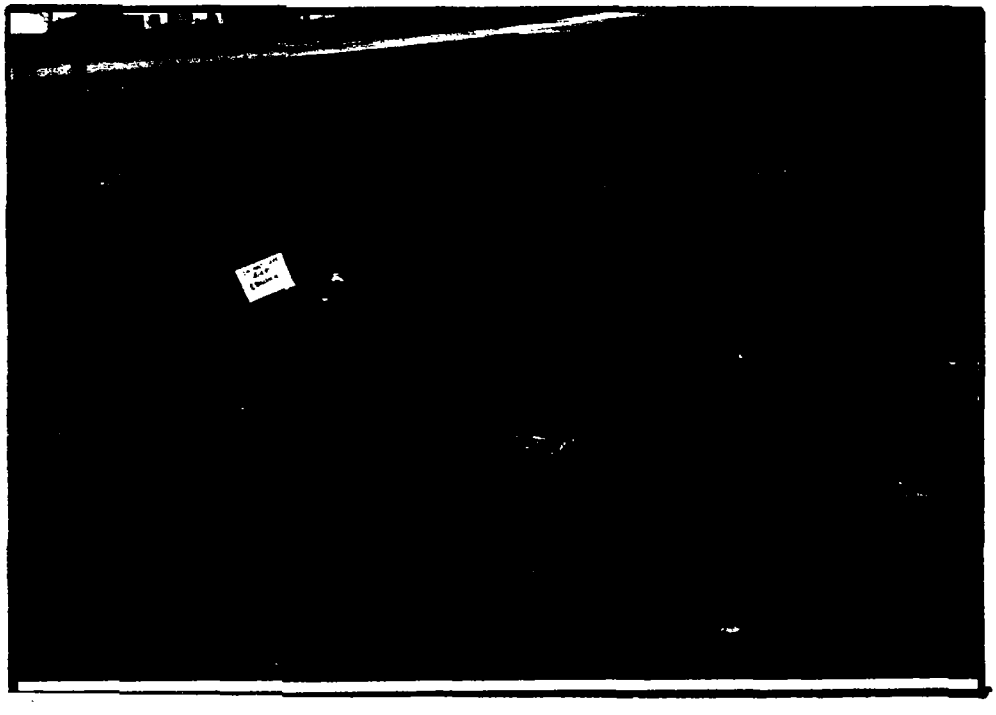
PHOTO LOOKING SOUTH SHOWS EXIT END OF CONCRETE BOX CULVERT PASSING UNDER ROUTE 9 NORTH OF SUBJ. FERT. FACILITY.

See photos 2, 3 & 4 For different views of this LocatioN.



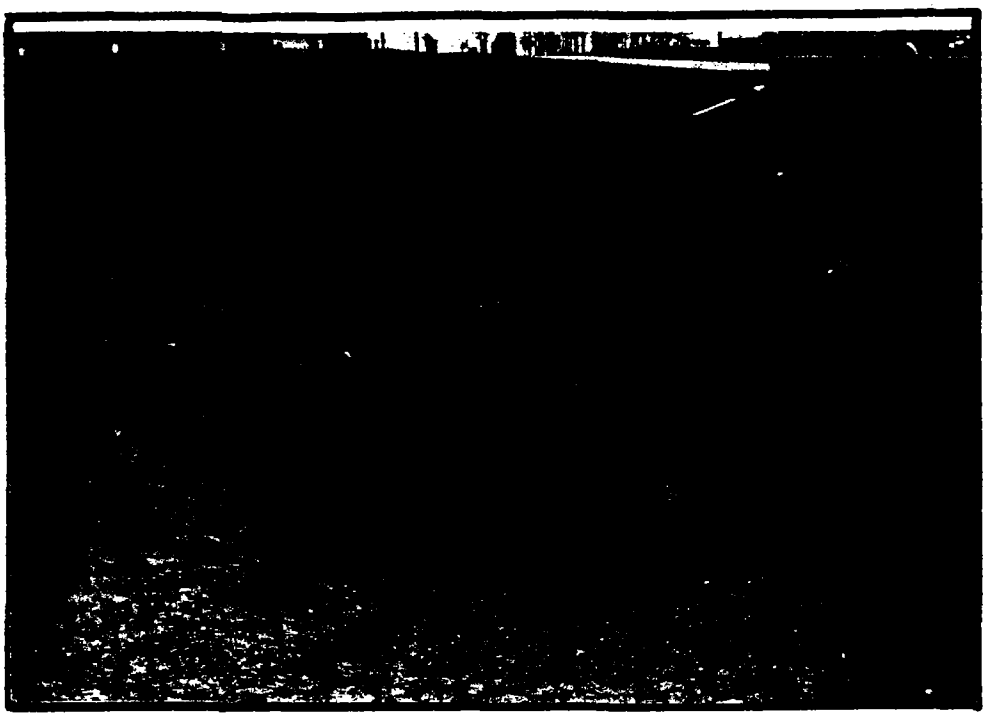
② Subject: } SAme
Photo Date: }
Photo By: }
Comments:

Note IDOT STORM WATer inlet grate.



③ Subject: } SAme
Photo Date: }
Photo By: }
Comments:

Photo looking west. Route 9 At Top.



(4) VERM. CO. (Near Hoopeston)
Subject: D.M. FERTILIZERS, INC.
Photo Date: 5/3/84
Photo By: S. Baldwin
Comments:

PHOTO LOOKING EAST.
Route 9 At upper Right.

Subject:
Photo Date:
Photo By:
Comments:

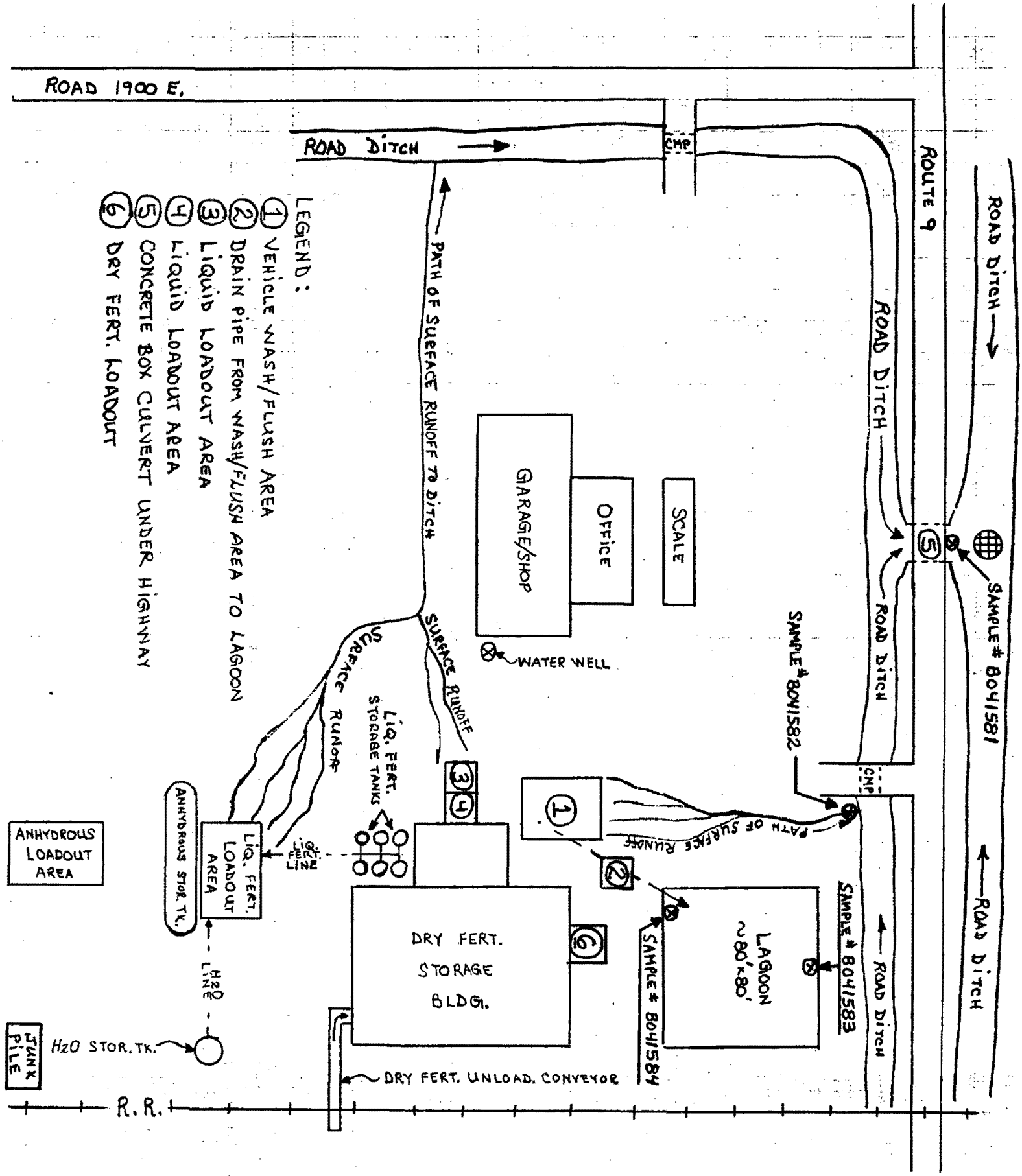
Subject:
Photo Date:
Photo By:
Comments:

NORTH — NO SCALE

STATE OF ILLINOIS
ENVIRONMENTAL PROTECTION AGENCY

IL 532-0357
ADM 39
054-002

Subject VERMILION CO. - D.M. FERTILIZERS, INC.
Data FACILITY SKETCH & SAMPLING POINT LOCATION SKETCH
Reviewed by STEVE BALDWIN, DWPC/FOS, Region 4 Date OF VISIT & SAMPLING - 5/3/84



106

Sample "A"

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SPECIAL ANALYSIS FORM

Time Collected 10:50 AM

Sub-Basin Champ.

Date Collected 5/3/84

Collector Baldwin

Facility Name: D.M. Fertilizer

Facility Number:

File Town Near Hoopeston

Stream Name(s)

Stream Code:

Source of Sample: (Exact Location) Discharge from box Culvert on North side of Rte. 9

Physical Observations, Remarks: Fairly clear, No obvious odor.

Flow Est. 1-2 GPM	Field Dissolved Oxygen	Field pH	Field Temp.

Arsenic	Coliform/100ml	4. BOD
Barium	Fecal Coliform 100 ml	12. COD
Boron	Fecal Strep 100 ml	1190. TS/EC
Cadmium	Algae (Total) /ml	Susp.Solids
Copper	77. Ammonia (N)	Vol.Susp.Solids
Chromium (tri)	Organic Nitrogen (N)	7.7 pH (units)
Chromium (hex)	Nitrate + Nitrite(N)	Turbidity (JTU)
Iron (Total)	39. Phosphorus (P)	Hardness
Iron (Dissolved)	Chloride	Alkalinity
Lead	Fluoride	Total Acidity
Manganese	Sulfate	Free Acidity
Mercury (ppb)	Cyanide	Oil
Nickel	MBAS	Other (Specify)
Selenium	Phenol (ppb)	
Silver		
Zinc		

Results in mg/1 unless otherwise noted.

Transported by: SB

Received by:

Transported by:

Received by:

FOR LAB USE ONLY

Lab Number: BL-1581 Rec'd by: MK

Date sample rec'd: MAY 3. 1984 Time: 4P

Date analysis completed:

Date results forwarded: MAY 15 1984

Total Tests requested: Tests run:

Lab Section: CHAMPAIGN Supervisor:

100% Recycled Paper

IL532-0546

LABS 3 3/73

106

Sample "B"

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SPECIAL ANALYSIS FORM

Time Collected 12:22PM

Sub-Basin Champ.

Date Collected 5/3/84

Collector Baldwin

Facility Name: D.M. Fertilizer

Facility Number:

File Town Near Hoopeston

Stream Name(s)

Stream Code:

Source of Sample: (Exact Location) Runoff From Facility. Collected From Puddle of Liquid in Roadside ditch on South Side of Route 9 Near N.W. Corner of Pond.

Physical Observations, Remarks: Slight brownish Color.

Flow Trickle	Field Dissolved Oxygen	Field pH	Field Temp.

Arsenic	Coliform/100ml	BOD
Barium	Fecal Coliform 100 ml	COD
Boron	Fecal Strep 100 ml	TS/EC
Cadmium	Algae (Total) /ml	Susp.Solids
Copper	3020 Ammonia (N)	Vol.Susp.Solids
Chromium (tri)	Organic Nitrogen (N)	pH (units)
Chromium (hex)	Nitrate + Nitrite(N)	Turbidity (JTU)
Iron (Total)	1600 - Phosphorus (P)	Hardness
Iron (Dissolved)	Chloride	Alkalinity
Lead	Fluoride	Total Acidity
Manganese	Sulfate	Free Acidity
Mercury (ppb)	Cyanide	Oil
Nickel	MBAS	Other (Specify)
Selenium	Phenol (ppb)	
Silver		
Zinc		

Results in mg/l unless otherwise noted.

Transported by: DB

Received by:

Transported by:

Received by:

FOR LAB USE ONLY

Lab Number BL-582 Rec'd by: MK

Date sample rec'd MAY -3 1984 Time: 4p

Date analysis completed:

Date results forwarded: MAY 15 1984

Total Tests requested: Tests run:

Lab Section CHAMPAIGN Supervisor:

100% Recycled Paper

IL532-0546

LABS 3 3/73

106

Sample "C"

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SPECIAL ANALYSIS FORM

Time Collected 12:24 PM

Sub-Basin Champ.

Date Collected 5/3/84

Collector Baldwin

Facility Name: D.M. FERTILIZER

Facility Number:

File Town Near Hoopeston

Stream Name(s)

Stream Code:

Source of Sample: (Exact Location) North Side of Pond.

Physical Observations, Remarks: Slight brownish Color.

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

Arsenic	Coliform/100ml	BOD
Barium	Fecal Coliform 100 ml	COD
Boron	Fecal Strep 100 ml	TS/EC
Cadmium	Algae (Total) /ml	Susp.Solids
Copper	865. Ammonia (N)	Vol.Susp.Solids
Chromium (tri)	Organic Nitrogen (N)	pH (units)
Chromium (hex)	Nitrate + Nitrite(N)	Turbidity (JTU)
Iron (Total)	2500. Phosphorus (P)	Hardness
Iron (Dissolved)	Chloride	Alkalinity
Lead	Fluoride	Total Acidity
Manganese	Sulfate	Free Acidity
Mercury (ppb)	Cyanide	Oil
Nickel	MBAS	Other (Specify)
Selenium	Phenol (ppb)	
Silver		
Zinc		

Results in mg/l unless otherwise noted.

Transported by: SB

Received by:

Transported by:

Received by:

FOR LAB USE ONLY

Lab Number: BL-1583 Rec'd by:

Date sample rec'd: MAY -3 1984 Time:

Date analysis completed:

Date results forwarded: MAY 15 1984

Total Tests requested: Tests run:

Lab Section: CHAMPAIGN Supervisor:

100% Recycled Paper
IL532-0546
LABS 3 3/73

1.01

Sample "D"

ILLINOIS ENVIRONMENTAL PROTECTION AGENCY

SPECIAL ANALYSIS FORM

Time Collected 12:30 PM

Sub-Basin Champ.

Date Collected 5/3/84

Collector Baldwin

Facility Name: D.M. Fertilizer

Facility Number:

File Town Near Hoopeston

Stream Name(s)

Stream Code:

Source of Sample: (Exact Location) South side of Pond Near S.W. Corner.

Physical Observations, Remarks: Slight brownish Color.

Flow	Field Dissolved Oxygen	Field pH	Field Temp.

_____ Arsenic	_____ Coliform/100ml	_____ BOD
_____ Barium	_____ Fecal Coliform 100 ml	_____ COD
_____ Boron	_____ Fecal Strep 100 ml	_____ TS/EC
_____ Cadmium	_____ Algae (Total) /ml	_____ Susp.Solids
_____ Copper	3651 Ammonia (N)	_____ Vol.Susp.Solids
_____ Chromium (tri)	_____ Organic Nitrogen (N)	_____ pH (units)
_____ Chromium (hex)	_____ Nitrate + Nitrite(N)	_____ Turbidity (JTU)
_____ Iron (Total)	240. Phosphorus (P)	_____ Hardness
_____ Iron (Dissolved)	_____ Chloride	_____ Alkalinity
_____ Lead	_____ Fluoride	_____ Total Acidity
_____ Manganese	_____ Sulfate	_____ Free Acidity
_____ Mercury (ppb)	_____ Cyanide	_____ Oil
_____ Nickel	_____ MBAS	_____ Other (Specify)
_____ Selenium	_____ Phenol (ppb)	
_____ Silver		
_____ Zinc		

Results in mg/l unless otherwise noted.

Transported by: [illegible]

Received by: _____

Transported by: _____

Received by: _____

FOR LAB USE ONLY

Lab Number: 84-584 Rec'd by: [illegible]

Date sample rec'd: MAY -3 1984 Time: [illegible]

Date analysis completed: _____

Date results forwarded: MAY 15 1984

Total Tests requested: _____ Tests run: _____

Lab Section: CHAMPAIGN Supervisor: [illegible]

IL532-0546
LABS 3 3/73